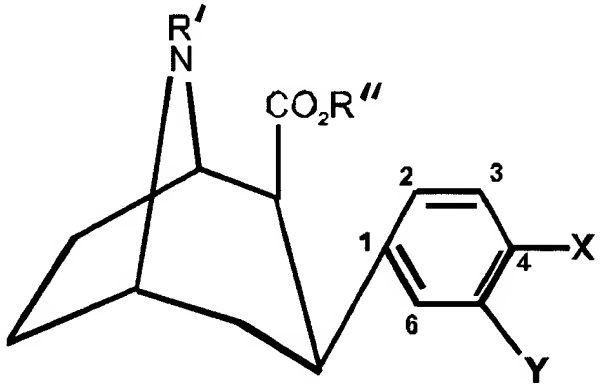
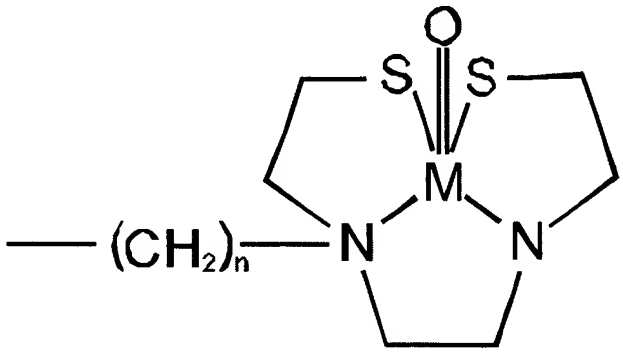
Listing of the claims:

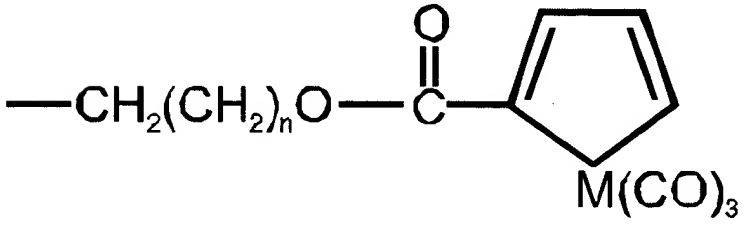
1. (original) A compound of the formula:



wherein X is $-CH_2CH_2Q$, -CHCHR or $-CCH_2FCH_2$ and Q is F or CH_2F, R is I, Br, Cl, F or CH_2F; Y is selected from a group consisting of H, F, Cl, Br and I. R' is $-CH_3$, $-CH_2F$, $CH_2(CH_2)nF$,

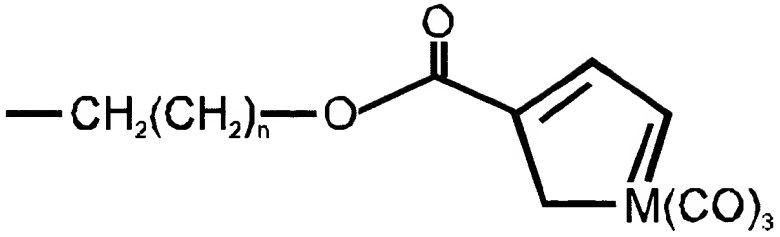


M = Tc, Re

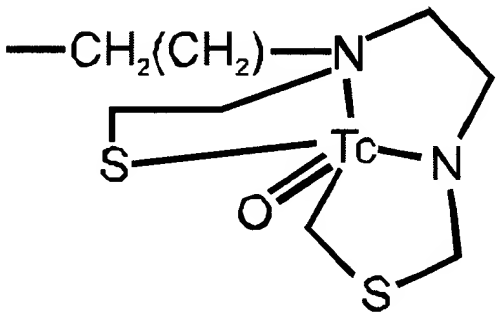


M = Re, Tc

R" is -CH3, CH2(CH2)nF,



M = Fe, Tc, Re



Where n is 1-5.

2. (original) The compound of claim 1 wherein at least one halogen is selected from the group consisting of ^{18}F, ^{123}I, ^{125}I, ^{131}I, ^{75}Br, ^{76}Br, ^{77}Br, and ^{82}Br.

3. (original) The compound of claim 1 wherein X is CH_2CH_2F or $CH_2CH_2{}^{18}F$.

4. (original) The compound of claim 1 wherein X is $CH_2CH_2CH_2F$ or $CH_2CH_2CH_2{}^{18}F$.

5. (original) The compound of claim 1 wherein X is CCH_2FCH_2 or $CCH_2{}^{18}FCH_2$.

6. (original) The compound of claim 1 wherein X is CHCHI.

7. (original) The compound of claim 1 wherein X is selected from the group consisting of $CHCH^{123}I$, $CHCH^{125}I$ and $CHCH^{131}I$.

8. (original) The compound of claim 1 wherein X is $CHCHCH_2F$ or $CHCHCH_2{}^{18}F$.

9. (original) The compound of claim 1 wherein X is CCH_2CH_2F or $CCH_2CH_2{}^{18}F$

10. (original) The compound of claim 3 wherein Y is Br.

11. (original) The compound of claim 3 wherein Y is Cl

12. (original) The compound of claim 6 wherein Y is H.

13. (original) The compound of claim 7 wherein Y is H.

14. (original) The compound of claim 8 wherein Y is H

15. (original) The compound of claim 9 wherein Y is H.

16. (original) The compound of claim 10 wherein R' and R" are CH3.

17. (original) The compound of claim 11 wherein R' and R" are CH3.

18. (original) The compound of claim 12 wherein R' and R" are CH3.

19. (original) The compound of claim 13 wherein R' and R" are CH3.

20. (original) The compound of claim 14 wherein R' and R" are CH3.

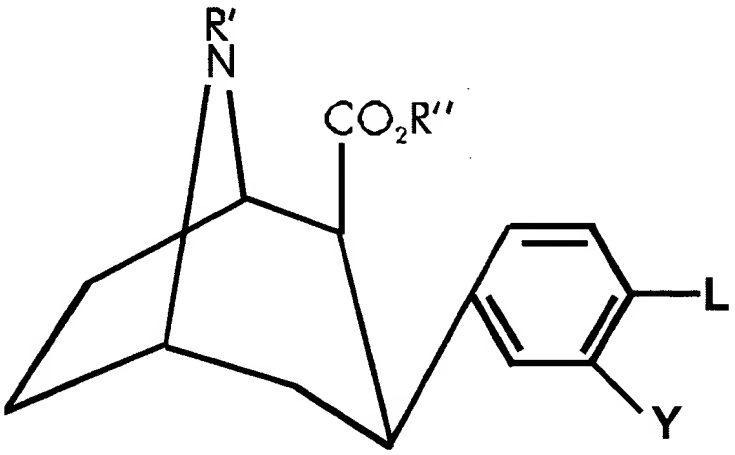
21. (original) The compound of claim 15 wherein R' and R" are CH3.

22. **(currently amended)** The compound of claim 18 wherein said compound is a Z ~~isomic~~ isomeric form.

23. **(currently amended)** The compound of claim 19 wherein said compound is a Z ~~isomic~~ isomeric form.

24. **(currently amended)** The compound of claim 20 wherein said compound is a Z ~~isomic~~ isomeric form.

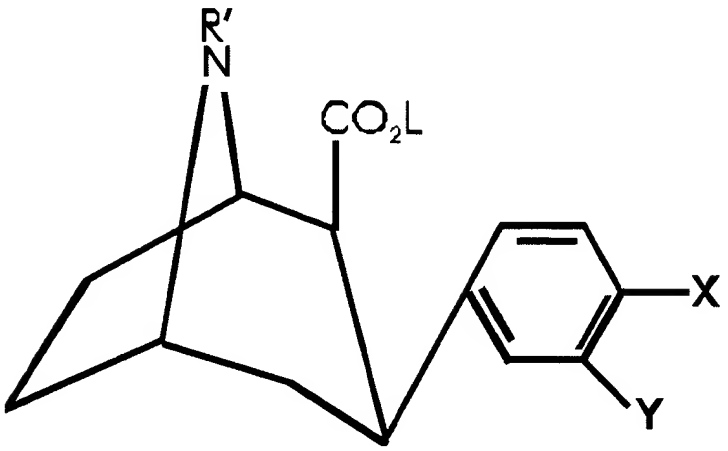
25. (original) A kit for rapid synthesis of a radioactively labeled compound of claim 1, comprising (a) a compound having the structure:



wherein L is a leaving group which is displaced by a radioactive group, (b) a reagent capable of displacing said L with a substituent containing a radioactive group.

26. (original) The kit of claim 25 wherein said radioactive group is selected from the group consisting of ^{18}F, ^{123}I, ^{125}I, ^{131}I, ^{75}Br, ^{76}Br, ^{77}Br, and ^{82}Br.

27. (original) A kit for rapid synthesis of a radioactively labeled compound of claim 1, comprising (a) a compound having the structure:



wherein L is a leaving group which is displaced by a radioactive group, (b) a reagent capable of displacing said L with a substituent containing a radioactive group.

28. (original) The kit of claim 27 wherein said radioactive group is selected from the group consisting of ^{18}F, ^{123}I, ^{125}I, ^{131}I, ^{75}Br, ^{76}Br, ^{77}Br, and ^{82}Br.

29. (original) A method of conducting positron emission tomography or single photon emission tomography imaging of a subject comprising administering to said subject an image-generating amount of a compound according to claim 1 which contains at least one radioactive halogen, and measuring the distribution within the subject of said compound by positron emission tomography or single photon emission tomography.

30. (original) The method of claim 29 wherein the halogen is selected from the group consisting of ^{76}Br, ^{75}Br, and ^{18}F, and the distribution of the compound measured by positron emission tomography.

31. (original) A method for conducting single photon emission imaging of a subject comprising administering to said subject an image-generating amount of a compound

according to claim 1 which contains at least one radioactive halogen, and measuring the distribution within the subject of said compound by single photon emission tomography.

32. (original) A method according to claim 31 wherein the compound of claim 1 contains at least one of the following: ^{75}Br, ^{77}Br, ^{123}I or ^{131}I, and measuring the distribution within the subject of said compound by single photon emission tomography.

33. **(New)** The compound of claim 1 wherein X is CHCHBr.

34. **(New)** The compound of claim 1 wherein X is selected from the group consisting $CHCH^{75}Br$, $CHCH^{76}Br$, $CHCH^{77}Br$, and $CHCH^{82}Br$.

35. **(New)** The compound of claim 33 wherein Y is H.

36. **(New)** The compound of claim 34 wherein Y is H.

37. **(New)** The compound of claim 35 wherein R' and R" are CH_3.

38. **(New)** The compound of claim 36 wherein R' and R" are CH_3.

39. **(New)** The compound of claim 35 wherein R' is $CH_2(CH_2)_4F$ and R" is CH_3.

40. **(New)** The compound of claim 36 wherein R' is $CH_2(CH_2)_4F$ and R" is CH_3.

41. **(New)** The compound of claim 39 wherein said compound is a Z isomeric form.

42. **(New)** The compound of claim 40 wherein said compound is a Z isomeric form.